

WHAT IS CLAIMED AS NEW AND IS INTENDED TO BE SECURED BY LETTERS
PATENT IS:

5 1. An aluminum-doped precipitated silica having a BET surface area of more than
300 m²/g, wherein aluminum is distributed uniformly in the silica.

10 2. The aluminum-doped precipitated silica of Claim 1, wherein the BET surface area
is 350 to 800 m²/g.

15 3. The aluminum-doped precipitated silica of Claim 1, wherein the aluminum is in
the form of Al₂O₃.

20 4. The aluminum-doped precipitated silica of Claim 1, having an Al₂O₃ content of
from 0.05 to 0.5% by weight.

25 5. The aluminum-doped precipitated silica of Claim 1, having an Al₂O₃ content of
from 0.05 to 0.25% by weight.

30 6. The aluminum-doped precipitated silica of Claim 1, wherein the silica is in the
form of particles having an average size of less than 15 µm.

35 7. The aluminum-doped precipitated silica of Claim 1, wherein the silica is in the
form of particles having an average size of 5 to 12 µm.

40 8. The aluminum-doped precipitated silica of Claim 1, having a DBP absorption of
from 200 to 500 g/100 g.

45 9. The aluminum-doped precipitated silica of Claim 1, having a DBP absorption of
from 250 to 350 g/100 g.

50 10. A process for preparing aluminum-doped precipitated silica, comprising:
a) heating a mixture of water and sodium silicate at a temperature of from 70 to 86°C
and adding sulfuric acid until half of the sodium silicate is neutralized; next

b) aging the mixture for a time of from 30 to 120 minutes; next
c) adjusting the pH of the mixture with sulfuric acid to a range of from 3.0 to 7.0, thereby precipitating the aluminum-doped silica; next
d) filtering the aluminum-doped silica from the mixture to form a filtercake and
5 washing the filtercake; next
e) drying and/or grinding the washed filtercake,
wherein an aluminum salt solution is metered into the mixture at step a) and/or step
c), the precipitated aluminum-doped silica has a BET surface of more than 300 m²/g, and the
aluminum is distributed uniformly in the aluminum-doped silica.

10 11. The process of Claim 10, wherein the aluminum salt solution is added to the mixture of water and sodium silicate in step a) of the process, prior to adding the sulfuric acid.

12. The process of Claim 10, wherein the aluminum salt solution is added continuously during step a) and/or step c).

13. The process of Claim 10, wherein the aluminum salt solution is added in step c) and prior to adding the sulfuric acid.

14. The process of Claim 10, wherein at least one or more of steps a), b), and c) are carried out with shearing.

15. A coating comprising the aluminum-doped precipitated silica of Claim 1.

20 16. Paper coated with the coating of Claim 15

17. Plastic film coated with the coating of Claim 15.

18. Fabric screen coated with the coating of Claim 15.

19. A flattening agent comprising the silica of Claim 1.

20. The coating of Claim 15, further comprising polyvinyl alcohol, wherein the coating has the form of a suspension having a solids content of from 10 to 30% by weight.

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